What is claimed is:

1. A method for supporting a correlation based tracking of a code modulated signal received at a receiver, wherein samples of said received signal and samples of at least one available replica code sequence are aligned to each other and wherein positions of said samples in said received signal and in said at least one replica code sequence are grouped, each group comprising all positions at which the composition of values of the samples of all of said at least one replica code sequence is similar, said method comprising:

combining the values of the samples of said received signal which are associated by their positions to a respective group separately for each group to obtain a respective intermediate result; and

determining a correlation value for each of said at least one replica code sequence by combining obtained intermediate results for all groups separately for each of said at least one replica sequence taking into account the values of the samples of said at least one replica sequence in the respective group.

2. The method according to claim 1,

wherein each group comprises all positions at which the composition of the values of the samples of all of said at least one replica code sequence is identical;

wherein the values of the samples of said received signal which are associated by their positions to a respective group are combined within each group by summing the values of the samples of said received signal within each group to obtain said intermediate result for

each group; and

wherein said intermediate results for all groups are combined separately for each of said at least one replica sequence by multiplying the value of the samples of a respective replica code sequence in a respective group with the intermediate result determined for this particular group and by summing the multiplication results for the respective replica code sequence for all groups.

3. The method according to claim 2,

wherein the number of current samples of said received signal and the number of samples of each of said at least one replica code sequence is N, and wherein the number of available replica code sequences is K;

wherein the employed code is a binary code using sample values of +1 and -1, the current samples of said received signal being denoted as: $x_{N-1}, x_{N-2}, \ldots, x_3, x_2, x_1, x_0$ and the samples of said at least one replica code sequences being denoted as: $r_{N-1}^k, r_{N-2}^k, \ldots, r_3^k, r_2^k, r_1^k, r_0^k$ with $k=1$ to K;

wherein 2^K groups $J_{b_1 \ldots b_K}$ are defined, $b_1 \ldots b_K$ being the notation of signs of the samples of said at least one replica code sequence, which samples are associated by their position to a respective group, and wherein a sample of said received signal at a specific position j is associated to a specific group $J_{b_1 \ldots b_K}$, if $\left(r_j^1 \ldots r_j^K\right) = \left(b_1, \ldots, b_K\right)$;

wherein said intermediate result for each group is determined to be $S_m = \sum_{j \in J_{b_1 \ldots b_K}} x_j$, where $m = \left(m_1, \ldots, m_K\right) = 0,1,\ldots,2^K - 1$ is

reserved for indexing the groups $J_{b_1 \ldots b_K}$ with $m_p = \begin{cases} 1 & b_p = 1 \\ 0 & b_p = -1 \end{cases}$ and $p=1 \ldots K$; and

wherein for the k^{th} replica code sequence, with $k = 1,\ldots,K$, the correlation value is determined to be $C^k = \sum_{m=0}^{2^K-1} b_{k,m} S_m$, where for each $m = (m_1,\ldots,m_K)$, $b_{k,m}$ is defined to be $b_{k,m} = \begin{cases} 1 & m_k = 1 \\ -1 & m_k = 0 \end{cases}$ for said k^{th} replica code sequence.

4. The method according to claim 1,

wherein said at least one replica code sequence comprises at least two replica code sequences;

wherein each group comprises all positions at which the composition of the differences between the values of the samples of all of said replica code sequences except for one selected replica code sequence and the value of the sample of said selected replica code sequence is identical;

wherein the values of the samples of said received signal which are associated by their positions to a respective group are combined within each group by multiplying the value of each sample at a particular position in said received signal with the value of the sample at said particular position in said selected replica code sequence, and by adding all resulting products within one group to obtain said intermediate result for each group;

wherein a correlation value for said selected replica code sequence is determined by summing the intermediate results of all groups; and

wherein a correlation value for any other replica sequence than said selected replica sequence is

determined by combining the difference between the value of the samples of the respective replica code sequence in a particular group and the value of the samples of the selected replica code signal in this particular group with the intermediate result determined for this particular group, and by summing the resulting values for all groups.

5. The method according to claim 4,

wherein the number of current samples of said received signal and the number of samples of each of said at least two replica code sequences is *N*, and wherein the number of available replica code sequences is *K+1*;

wherein the employed code is a binary code using sample values of +1 and -1, the current samples of a received signal being denoted as: $x_{N-1}, x_{N-2}, \ldots, x_3, x_2, x_1, x_0$ and the samples of the replica code sequences being denoted as: $r_{N-1}^k, r_{N-2}^k, \ldots, r_3^k, r_2^k, r_1^k, r_0^k$ with *k=0* to *K*;

wherein 2^K groups $J_{b_1 \ldots b_K}$ are defined, $b_1 \ldots b_K$ being a notation of sign changes of the samples of said replica code sequences except for a first one of said replica code sequences compared to the samples of said first replica code sequence for a respective group, all samples being associated by their position to a respective group, and wherein a sample of said received signal at a specific position j is part of a group $J_{b_1 \ldots b_K}$, if $\left(r_j^0 r_j^1 \ldots r_j^K\right) = \pm(1, b_1, \ldots, b_K)$;

wherein said intermediate result for each group is determined to be $S_m = \sum_{j \in J_{b_1 \ldots b_K}} r_j^0 x_j$, where $m = (m_1, \ldots, m_K) = 0,1,\ldots,2^K - 1$ is reserved for indexing the groups $J_{b_1 \ldots b_K}$ with

$m_p = \begin{cases} 1 & b_p = 1 \\ 0 & b_p = -1 \end{cases}$ and $p=1...K$;

wherein for said first replica code sequence, the correlation value is determined to be $C^0 = \sum_{m=0}^{2^K-1} S_m$; and

wherein for the k^{th} replica code sequence, with $k = 1,...,K$, the correlation value is determined to be $C^k = \sum_{m=0}^{2^K-1} b_{k,m} S_m$, where for each $m = (m_1,...,m_K)$, $b_{k,m}$ is defined to be $b_{k,m} = \begin{cases} 1 & m_k = 1 \\ -1 & m_k = 0 \end{cases}$ for the k^{th} replica code sequence.

6. The method according to claim 1, wherein it is determined whether a sample at a particular position in said received signal is associated by its position to a particular group by evaluating the composition of the values of the samples of said at least replica code sequence at said particular position.

7. The method according to claim 6, wherein the employed code is a binary code, and wherein said composition of the values of the samples of said at least replica code sequence at said particular position is evaluated by means of an XOR logic.

8. The method according to claim 1, wherein said signal received at a receiver is a signal transmitted by a satellite of a satellite positioning system.

9. A processing unit supporting a correlation based tracking of a code modulated signal received at a receiver, wherein samples of said received signal and samples of at least one available replica code sequence

are aligned to each other and wherein the positions of said samples in said received signal and in said at least one replica code sequence are grouped, each group comprising all positions at which the composition of the values of the samples of all of said at least one replica code sequence is similar, said unit comprising:

a first combining portion for combining the values of the samples of a received signal which are associated by their positions to a respective group separately for each group to obtain a respective intermediate result; and

a second combining portion for determining a correlation value for each of said at least one replica code sequence by combining intermediate results provided by said first combining portion for all groups separately for each of said at least one replica sequence taking into account the values of the samples of said at least one replica sequence in the respective group.

10. The processing unit according to claim 9, wherein said processing unit is a tracking correlator.

11. The processing unit according to claim 9, wherein said processing unit is said receiver receiving said code modulated signal.

12. The processing unit according to claim 9, wherein said processing unit is adapted to receive said samples of a signal received at said receiver from said receiver.

13. A system enabling a correlation based tracking of a code modulated signal received at a receiver, wherein samples of said received signal and samples of at least one available replica code sequence are aligned to each

other and wherein the positions of said samples in said received signal and in said at least one replica code sequence are grouped, each group comprising all positions at which the composition of the values of the samples of all of said at least one replica code sequence is similar, said system comprising:

a first combining portion for combining the values of the samples of a received signal which are associated by their positions to a respective group separately for each group to obtain a respective intermediate result; and

a second combining portion for determining a correlation value for each of said at least one replica code sequence by combining intermediate results provided by said first combining portion for all groups separately for each of said at least one replica sequence taking into account the values of the samples of said at least one replica sequence in the respective group.

14. A software program product in which a software code for supporting a correlation based tracking of a code modulated signal received at a receiver is stored, wherein samples of said received signal and samples of at least one available replica code sequence are aligned to each other and wherein positions of said samples in said received signal and in said at least one replica code sequence are grouped, each group comprising all positions at which the composition of values of the samples of all of said at least one replica code sequence is similar, said software code realizing the following steps when running in a processing unit:

combining the values of the samples of said received signal which are associated by their positions to a respective group separately for each group to obtain a

respective intermediate result; and

determining a correlation value for each of said at least one replica code sequence by combining obtained intermediate results for all groups separately for each of said at least one replica sequence taking into account the values of the samples of said at least one replica sequence in the respective group.